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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,547	03/30/2001	Sudheer Sirivara	42390P10452	7647

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EXAMINER
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VO, HUYEN X

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/822,547

**Applicant(s)**

SIRIVARA, SUDHEER

**Examiner**

Huyen Vo

**Art Unit**

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Aslam A. Jaffery on 4/26/2005. The application has been amended as follows: Claims 1-6, 12-14, 28, and 32-37, filed on 2/23/2005, have been cancelled in favor of new claims presented below:

1. A method, comprising:
  - receiving input text at a client device;
  - analyzing the input text to determine diphones;
  - sending a request to a server for diphone waveform data based on the determined diphones;
  - locating the requested diphone waveform data by searching a concatenative diphone waveform database at the server;
  - generating a set of compressed diphone residuals and Linear Predictive Coding (LPC) coefficients by compressing results of the searched diphone waveform database;
  - storing the set of compressed diphone residuals and the LPC coefficients in a compressed packet;

transmitting the compressed packet to the client device; and  
upon receiving the compressed packet, the client device decompresses the compressed packet back to diphone waveform data available for use in a text-to-speech synthesizer.

2. The method of claim 1, wherein the generating of the set of compressed diphone residuals is performed using an encoder.
3. The method of claim 1, further comprising receiving the request from the text-to-speech synthesizer, the text-to-speech synthesizer residing at the client device.
4. The method of claim 1, further comprising providing pitch marks to the text-to-speech synthesizer.
5. The method of claim 2, wherein the encoder comprises a G.723 encoder.
6. A system, comprising:
  - a sever;
  - a client device coupled the sever, the client device to
    - receive input text,
    - analyze the input text to determine diphones, and

send a request to the server for diphone waveform data based on the determined diphones;

the server to

locate the requested diphone waveform data by searching a concatenative diphone waveform database,

generate a set of compressed diphone residuals and Linear Predictive Coding (LPC) coefficients by compressing results of the searched diphone waveform database,

store the set of compressed diphone residuals and the LPC coefficients in a compressed packet, and

transmit the compressed packet to the client device; and

the client device to decompress the compressed packet back to diphone waveform data available for use in a text-to-speech synthesizer.

7. The system of claim 6, wherein the server is further to generate the set of compressed diphone residuals using an encoder, the encoder including a G.723 encoder.

8. The system of claim 6, wherein the server is further to provide pitch marks to the text-to-speech synthesizer at the client device.

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9. The system of claim 8, wherein the text-to-speech synthesizer at the client is further to receive pitch marks.

10. The system of claim 6, wherein the client device comprises a handheld device including one or more of the following: a telephone, a pocket computer system, and a personal digital assistant (PDA).

11. A machine-readable medium having stored thereon data comprising sets of instructions which, when executed by a machine, cause the machine to:

- receive input text at a client device;

- analyze the input text to determine diphones;

- send a request to a server for diphone waveform data based on the determined diphones;

- locate the requested diphone waveform data by searching a concatenative diphone waveform database at the server;

- generate a set of compressed diphone residuals and Linear Predictive Coding (LPC) coefficients by compressing results of the searched diphone waveform database;

- store the set of compressed diphone residuals and the LPC coefficients in a compressed packet;

- transmit the compressed packet to the client device; and

upon receiving the compressed packet, the client device decompresses the compressed packet back to diphone waveform data available for use in a text-to-speech synthesizer.

12. The machine-readable medium of claim 11, wherein the generating of the set of compressed diphone residuals is performed using an encoder.

13. The method of claim 11, wherein the sets of instructions which, when executed by the machine, further cause the machine to receive the request from the text-to-speech synthesizer, the text-to-speech synthesizer residing at the client device.

14. The machine-readable medium of claim 11, wherein the sets of instructions which, when executed by the machine, further cause the machine to provide pitch marks to the text-to-speech synthesizer.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kochanski et al. (US 6625576) in view of Narayan (US 5717827).

4. Regarding claims 1, 6, and 11, Kochanski et al. disclose a client/server text-to-speech system in that the client device requests the server to supply specific acoustic units for use in speech synthesis. Upon receiving the request for acoustic units, the server retrieves requested acoustic unit by search its database. Results of the search are then transmitted to the client device for use to perform text-to-speech (*the operation of figure 5 and/or referring to col. 9, line 25 to col. 11, line 30*). Kochanski et al. fail to specifically disclose the step of generating a set of compressed diphone residuals and Linear Predictive Coding (LPC) coefficients by compressing results of the searched diphone waveform database in a compressed packet, and decompressing the compressed packet back to diphone waveform data available for use in a text-to-speech synthesizer. However, Narayan teach the step of generating a set of compressed diphone residuals and Linear Predictive Coding (LPC) coefficients by compressing results of the searched diphone waveform database in a compressed packet, and decompressing the compressed packet back to diphone waveform data available for use in a text-to-speech synthesizer (*col. 6, line 14 to col. 10, line 67*).

Since Kochanski et al. and Narayan are analogous art because they are from the same field of endeavors, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Kochanski et al. by incorporating the teaching of Narayan in order to reduce storage space and minimize the usage of transmission bandwidth.



5. Regarding claims 2-5, 7-10, and 12-14, subject matters claimed in these claims are within the scope of the invention (*referring to Kochanski et al. and/or Narayan references*).

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huyen Vo whose telephone number is 703-305-8665. The examiner can normally be reached on M-F, 9-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703-305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HXV

April 28, 2005

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SUSAN MCFADDEN  
PRIMARY EXAMINER